NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

FLOODWAY
(ft)
CODE 404

Definition

A channel, usually bounded by dikes, used to carry flood flows.

Purpose

To carry floodwater from a side drainage across a flood plain into the channel of a main stream. Floodways are also used along the course of a main stream where, by means of dikes, part of the flood plain is used to carry floodwater and the rest is protected.

Conditions where practice applies

(1) Overflow areas of streams or rivers where existing channels are inadequate to carry the floodwaters without flooding and damaging property, and the design storm discharge can be confined between dikes or a combination of channel and dikes without causing excessive erosion. (2) Sites where the storm runoff from side tributaries that will be ponded outside the floodway will not cause damages in excess of the benefits less the cost of the project.

This practice does not apply to floodwater diversions (400) that divert water from low-lands. A floodwater diversion can empty into a floodway. This practice does not apply to channel improvement where spoil is set back from the excavated areas and where no provision is made to confine the floodwater to the channel side of the spoil.

An outlet for the floodway must be available to provide for discharge of the quantity of water for which the floodway is to be designed without creating stage increases in the outlet that could result in damages above or below the point of discharge that might involve legal actions under state laws.

Classification

In as much as a large percentage of floodways includes dikes as a major feature of the floodway, the same classification used for dikes is used for floodways. The classes are defined in the standard for dikes (356).

Class I floodways:

1. Include Class I dikes as a feature of the floodway or
2. Are constructed to protect areas where either of the following conditions apply:
   a. There is a possibility of loss of life should dike failure occur.
   b. High-value land or improvements are to be protected

Class II floodways:

1. Include Class II dikes as a feature of the floodway or

2. Are constructed to protect agricultural lands of medium to high capability; improvements are generally limited to farmsteads and allied farm facilities.

Class III floodways:

1. Include Class III dikes as a feature of the floodway or

2. Are constructed to protect agricultural lands of relatively low capability or improvements of relatively low value.

Design criteria

The design and installation of a floodway and each of its features shall be based on engineering surveys and investigations that shall be made as recommended in applicable sections of the NRCS National Engineering Handbook and in TR-25, “Planning and Design of Open Channels.” Rates of flow resulting from runoff from the storm against which protection is to be provided and the design for stability of the channel included in the floodway shall be determined from and based on these investigations. Criteria for channel stability,

velocity, and coefficient of roughness contained in the standard for open channels (582) shall be followed.

Proportioning of the width and depth of flow in the floodway shall be based on consideration of the area to be occupied by the floodway with respect to the area to be protected, requirements for entrance of side drainage into the floodway, stage of water in the outlet for the design storm, velocities in the floodway at design flow and requirements for stability of the channel and dikes, and the effect on the water surface profile upstream from the floodway.

In designing a floodway, the effect of future upstream floodway construction that will increase the peak rate of flow should be considered. Provisions for future enlargement of the floodway to take care of this increase may be warranted.

In selecting the location and design of a floodway careful consideration shall be given to the preservation of valuable fish and wildlife habitat and trees that are of significant value for wildlife food or shelter and to visual resources.

From an economic standpoint, the best design for a floodway, including channel improvement and the correct proportioning of the width of the floodway and the height of dikes, results in a minimum cost for the dikes, channel improvements, and the value of the unprotected land in the floodway. The value of the unprotected land for this analysis would be the difference in its value if it could be protected and its value for floodway purposes.

Class I floodways. Class I floodways shall be designed to provide maximum feasible protection. If urban protection is one of the primary objectives of a project or segment thereof, the project shall be planned to keep water out of the main part of the urban area if the largest flood of record were repeated. Such protection shall rarely be less than the 100-year-frequency level.

Dikes used or constructed as part of Class I floodways shall meet NRCS criteria established for Class I dikes.

Class II floodways. If dikes are included as a feature of Class II floodways, they shall meet NRCS standards for Class II dikes, and the design criteria established thereby shall also apply to the floodway.

If dikes are not included in Class II floodways, the floodway shall have the capacity to carry the design flow selected on the basis of a study of site conditions.

Maintenance. Provisions for maintenance shall be as specified in the standard for open channels (582).

Plans and specifications

Plans and specifications for constructing floodways shall be in keeping with this standard and shall describe the essential requirements for properly installing each feature of the floodway to achieve the intended purpose.

Floodway Specifications

Construction shall be carried out in such a manner that erosion and air and water pollution are minimized and held within legal limits.

The areas to be excavated or occupied by dikes or spoil banks shall be cleared of trees, brush, other vegetation, and debris. Other areas in the floodway to be cleared as part of the required improvement shall be specified. Clearing shall be done in such a manner that as little vegetation as possible outside the limits of the floodway is destroyed. Special efforts shall be made to save large trees in the floodway that have significant value for wildlife food or shelter or for visual resources of the site. Cleared debris shall be removed from the floodway and disposed of as specified.

Excavation shall be made as provided in the plans and specifications and as staked in the field. Spoils from excavations shall be disposed of as specified.

Dike (356) construction shall be in accordance with standards for the particular class of dike, as provided in the plans and specifications and as staked in the field.

Planning considerations for water quantity and quality

Quantity

1. Potential changes in runoff, infiltration of runoff water into soil, percolation below root zone, and the amount of ground water recharge.
2. Effects of soil moisture changes on vegetation or land use in the vicinity of the floodway.

Quality

1. Potential to reduce erosion and sedimentation; the effect of sedimentation on water a quality, and sediment damage to flood plains, streambanks, and downstream channels.
2. Effects on the area's visual quality.

NOTEKEEPING

This is a practice that, at preset, has not been used, or has little application in Louisiana. As time permits, or as the need arises, engineering Notekeeping procedures will be developed for this practice. In the event a request for this practice is received prior to issuance of notekeeping procedures contact the engineer for recommendations, and follow standard survey and notekeeping procedures contained in TR-62.